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REMARKS

Abstract. The Examiner objects to the Abstract. A correction has been made.

Art rejection. The Examiner rejects claims 1 and 2 as supposedly obvious over a two-way combination of a US Pat. No. 6532500 to Li et al. ("Li") and a US Pat. No. 6651178 to Voegeli et al. ("Voegeli").

Claim 1, with reference letters inserted for convenient reference herein, is:

> A power supply unit controller for a rack enclosure in which a plurality of devices communicate via a backplane, said controller comprising:
>
> [a] means for reading at least one signal indicative of an output supply level being provided to said backplane by a power supply unit associated with said power supply unit controller;
>
> [b] memory for storing at least one value associated with a respective one of the at least one signal;
>
> [c] means for communicating said at least one value to one of said devices; and
>
> [d] means for receiving power for said power supply unit controller from said backplane.

The Examiner is respectfully reminded that all claims are limited in that each power supply unit controller has "means for receiving power for said power supply unit controller from said backplane," detailed in limitation [d]. The backplane in turn receives power from a power supply unit associated with the power supply unit controller, as detailed in limitation [a]. It is clear from this that any would-be reference cited against this claim would need to have a backplane that receives power from one or more power supply units, and that has power supply unit controllers each associated with a power supply unit, the power supply unit controllers each receiving power from the backplane.

These limitations cannot be ignored in the examination of the claim. These limitations are discussed for example at page 5, lines 14-33 (published paragraphs 21 and 22):

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> In the preferred embodiment, the PSU controller 22, rather than drawing its power supply V_{cc} from the closest available source, i.e. the PSU 10, instead draws its power from an appropriate one of the 3.3V, 5V or 12V supply rails on the backplane 10. This could be seen as adding a potential point of failure to the system, however, it means that should the PSU incorporating the PSU controller either completely fail or should its V_{cc} supply rail being used by the PSU controller fail, it is still possible for the PSU controller to draw power from any remaining operational PSUs located in the enclosure and supplying power to the backplane 10.
>
> So, while the addition of a microcontroller *per se* to the power supply could on the one hand be seen as an additional potential point of failure, the PSU controller of the preferred embodiment can remain operational and provide useful information to an operator long after its corresponding PSU has failed.

Some discussion of Li may be helpful. Although the Examiner has not explained what exactly in Li supposedly corresponds to the PSU controller of the claim, the part in Li which the Examiner seems to suggest corresponds to the PSU controller of the claim is the Embedded Management Controller 160 or EMC (col. 1, line 41). Li teaches that its EMC "operates on system power when computer system 100 is powered up, and on standby power when computer system 100 is powered down." (Col. 5, lines 37-40.) More particularly Li teaches that "during operation, EMC 160 is supplied with operating power V_A from an external source such as an electrical outlet, or an internal source such as a battery." (Col. 6, lines 9-12.)

The Examiner is requested to explain exactly what it is in Li that supposedly corresponds to the PSU controller of the claim. If it is the EMC 160, then it is pointed out that the EMC 160 does not in fact correspond at all. EMC 160 is taught as a device which draws power from either of two different places, AC ("system") power or battery power. In contrast, the PSU controller of the claim draws no power from batteries. Instead it draws its power from a *single place* namely the backplane. Li, teaching the user of two different power sources, one of which is a battery, thus actively teaches away from the limitations of the claims.

The undersigned has diligently reviewed Li and is unable to find within Li any hint or suggestion of a backplane *to which* power is supplied by power supply units, and *from which* the power

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supply unit controllers receive power. Li seems to be missing limitation [d], that is, the "means for receiving power for said power supply unit controller from said backplane." Apparently admitting this, the Examiner appeals to Voegeli as somehow providing the missing backplane and missing power connections to and from the backplane. But to provide limitation [d], a reference would not merely need to provide power to a power supply unit controller from any old backplane. Instead, such a reference would need to provide power to a power supply unit controller from *said* backplane, namely the same backplane which in limitation [a] is the backplane to which the associated power supply unit provides power. Voegeli is not, so far as the undersigned can discern, such a reference.

Some discussion of Voegeli may be helpful. Voegeli does have a backplane 3 (fig. 1, col. 4, lines 10-21). Even a cursory reading of Voegeli immediately reveals, however, that this backplane is missing a limitation of the claim. While Voegeli mentions a backplane 3 supplying power to a power system controller 4, Voegeli teaches away from the notion of a power supply unit 6 associated with the power system controller 4 then providing power to the backplane 3. Instead, Voegeli teaches that the power provided by the power supplies 6 is passed to a power bus 8 which then goes to electrical circuits 10. Voegeli seems to teach that the power from the associated power supply ought not to get anywhere near the backplane 3 which powers the power system controller 4.

Voegeli is thus not only missing limitation [a] ("means for reading at least one signal indicative of an output supply level being provided to said backplane by a power supply unit associated with said power supply unit controller") but seems actively to teach away from limitation [a] by teaching that the power from the power supplies ought never to get anywhere near the backplane.

The Examiner admits that none of the cited references provides limitation [b], that is, the "memory for storing at least one value associated with a respective one of the at least one signal." The Examiner's response to this limitation is to state, without support, the view that "it is obvious that the power supply monitors comprise a memory because it performs I/O functions

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and it is well known that I/O devices use input and output buffers when sending and receiving data. I/O buffers are interpreted as a memory." Applicant's attorney disagrees with this view, and motivated by the case of *In Re Ahlert and Kruger*, 165 USPQ 418 (CCPA 1970) applicant's attorney hereby challenges this view and asks whether the Examiner can show support for this view.

Indeed, the view expressed by the Examiner, that "it is obvious that the power supply monitors comprise a memory because it performs I/O functions and it is well known that I/O devices use input and output buffers when sending and receiving data" seems to be a mistaken view. Consider for example US Pat. No. 5475295 to Hong, cited by this Examiner in a recent Office Action in application serial number 09/681,656. Hong is cited by this Examiner as an example of a power supply monitor. Hong admittedly has an output function (see LED LD1 in Fig. 1) yet it is not clear that there is an "output buffer". Instead it appears the power supply monitor 12 of Hong passes its data directly to a mixer 18 and thence to the LED LD1.

The Examiner's view, plainly put, is:

- that all power supply monitors supposedly perform I/O functions,

- that all I/O functions are supposedly performed by I/O devices,

- that all I/O devices supposedly use input and output buffers when sending and receiving data;

- that input and output buffers "are interpreted as" memory.

This view, if adopted, simply reads limitation [b] out of the claim. This view says that if the other limitations of the claim are satisfied, then automatically and necessarily limitation [b] is satisfied. This view reads the claim as if limitation [b] were not there.

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Of course this is an improper construction of claim 1. The claim should be construed so that limitation [b] is something other than a nullity. As such, to render the claim unpatentable, it would be necessary that the Examiner actually find a "memory for storing at least one value associated with a respective one of the at least one signal." This the Examiner has not yet done.

Claim 4 has been added, which claim sets forth that a "stored" value (previously stored in the memory) is communicated. Claim 4, drafted based upon claim 1 but with this additional limitation that what is communicated is a stored value, emphasizes this failing in the cited references and ought to be allowable despite the references.

Claim 2 is:

> A rack enclosure including
>
> [a] a backplane,
>
> [b] at least one power supply unit connected to and adapted to supply power to said backplane, each associated with a respective power supply unit controller according to claim 1, and
>
> [c] a plurality of devices receiving power from said backplane, at least one of said devices adapted to communicate with the at least one power supply unit controller.

The Examiner expresses the view that claim 2 is obvious over a two-way combination of Li and Voegeli. Yet claim 2 is limited in that there is a "rack enclosure" and no rack enclosure is seen in either Li or Voegeli.

The arguments presented above in respect of the rejection of claim 1 apply equally well in respect of the rejection of claim 2. Neither reference has a backplane that both receives power from power supplies and also provides power to power supply unit controllers. Each reference actively teaches away from the limitations of the claim.

There is another problem which is that the Examiner has not pointed to the items in either

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reference which supposedly count as the "plurality of devices receiving power from said backplane," one of which communicates with the power supply unit controller.

The Examiner is requested to point to these items, or to withdraw the rejection.

The Examiner rejects claim 3 as supposedly obvious over a three-way combination of Li and Voegeli and US Pat. No. 5815652 to Ote et al. ("Ote").

Claim 3 is:

> A rack enclosure as claimed in claim 1 in which
>
> [a] one of said devices is an Enclosure Services processor arranged to communicate with a bus controller through one of a SCSI Enclosure Services (SES) or a SCSI Access Fault Tolerant Enclosure (SAF-TE) protocol and
>
> [b] said power supply unit controller is adapted to communicate with said Enclosure Services processor.

The arguments presented above in respect of the rejection of claim 1 apply equally well in respect of the rejection of claim 2. Neither reference has a backplane that both receives power from power supplies and also provides power to power supply unit controllers. Each reference actively teaches away from the limitations of the claim.

The Examiner admits that all of the limitations of claim 3 are missing from either cited reference Li and Voegeli. For this reason, the Examiner adds a third reference Ote to the combination, urging that Ote provides all of the missing limitations of claim 3. To do this, however, the Examiner makes numerous unsupported assertions as to what would supposedly be obvious. These include:

> It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Li-Voegeli system to include the service processor of Ote because it would provide a means to control the system power even during a fault condition as taught by Ote.

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> Lastly, because the Li-Voegeli system controls the system power through a PSUC, it is obvious that the service processor would have a communication means with the PSUC so that the service processor could control the supply power when it is required to do so.

There is, of course, no "Li-Voegeli system." There is a Li system which teaches the use of two separate power sources, one a battery and the other AC power. There is a Voegeli system which teaches the use of a single backplane to power a power supply controller which in turn controls power supplies which do *not* provide power to the backplane. These systems each aggressively teach away from the claimed system, though in different ways.

But in any event, Applicant's attorney disagrees with these assertions as to what is supposedly obvious in connection with Ote, and motivated by the case of *In Re Ahlert and Kruger*, 165 USPQ 418 (CCPA 1970) applicant's attorney hereby challenges these assertions and asks whether the Examiner can show support for these assertions.

Respectfully submitted,

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